Università degli Studi di Palermo

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UTADEO
UNIVERSIDAD DE BOGOTÁ JORGE TADEO LOZANO

Radboud Universiteit

Doctoral Program in "Model-based Public Planning, Policy Design & Management"

Curriculum of the PhD in "System Dynamics"

CED4
System Dynamics Group

Background

The Doctoral program in "Model Based Public Planning, Policy Design & Management" is a curriculum of the PhD in "System Dynamics" delivered by the University of Palermo (Italy) through its Department of Political Sciences. Our program enables students to learn how to blend System Dynamics modeling with Performance Management & Governance to enhance sustainable public value creation, at both an organizational and interorganizational level. This provides stakeholders with an outcome-based and learning-oriented view of sustainable public value creation, as a ground for strategic planning and ongoing performance evaluation.

Through such a view, main stakeholders are not only governmental organizations, but also businesses and civil society institutions (e.g.: non-profits, hybrid, and community-based organizations). Such a broad "public service logic" stretches the value creation domain from a governmental setting to a collaborative ground for public service co-production and interorganizational collaboration rooted in ecosystems for sustainable community value creation.

Such a "Dynamic Performance Management & Governance" approach triggers facilitated performance dialogue among different stakeholders, and meta-governance, to build collaborative platforms as a ground for policy analysis, strategic planning, and performance governance in pursuing sustainable "place-based" value creation.

By adopting a holistic sustainability perspective, students will learn to model societal transition as a continuous process that fosters a place's aptitude to pursue its survival and lifelong existence by incorporating change through enduring resilience. This supports stakeholders in framing and dealing with trade-offs in time and space between and across sustainability's socio-economic, cultural, and ecological dimensions.

The learning-oriented approach characterizing such ongoing transition processes is able to support the localization of the 2030 UN Agenda. In fact, a "place-based" view of transition may better embed SDGs in a place, analyze and diagnose their local causes, design and sustain specific policies aimed at mitigating and/or preventing the interconnected "wicked" problems behind the UN 2030 Agenda.

For instance, modeling how to foster active citizenship, helps stakeholders sustaining collaborative policies addressing various wicked issues, such as pursuing "One-Health" or sustainable mobility.

Research Areas

Research will focus on wicked problems, emphasizing the need for multi-level, multi-actor, and multi-sectoral approaches.
During the program and in the development of their theses, our students will be able to benefit from the tight relationships between our Ph.D. program and the Center for Sustainability & Ecological Transition at the University of Palermo, where we are conducting a project with local stakeholders, aimed at building System Dynamics-triggered collaborative platforms to foster sustainable “placed-based” value creation.
The program will develop projects involving the creation and orchestration of collaborative platforms to support stakeholder engagement, knowledge sharing, and joint decision-making, aimed at optimizing policy effectiveness and sustainability.
A significant focus will be on fostering "place-based" holistic resilience through the modular development of collaborative platforms, ensuring that local contexts are considered and integrated into broader policy frameworks.
The program encourages the integration of interdisciplinary perspectives to design holistic solutions for "wicked" problems and promote active citizenship, fostering sustainable communities through innovative policy design and implementation.

Outcomes of the program

By attending the program, students will learn how system dynamics modeling and simulation can support collaborative governance, which is essential for managing ‘wicked’ social issues (e.g., traffic congestion, societal aging, unemployment, crime, corruption, terrorism, planetary health, poverty, migration flows, climate change, and natural disasters) and achieving sustainable community outcomes. These issues are characterized by dynamic complexity, involving multi-level, multi-actor, and multi-sectoral challenges.
The program ensures that graduates can support stakeholders in co-creating policies, building up and deploying shared resources, and enhance policy analysis to improve place-based resilience and sustainability.
Examples of professional fields where our graduates will be able to develop a qualified career from attending our program are: 1) Universities and Research institutions; 2) “Think tanks”; 2) Government; 3) NGOs, non-profit, and grassroots organizations; 4) Business and hybrid organizations; 5) Consulting.

Our students will also benefit from our partnership with the University of Bergen and the Radboud University in Nijmegen, where they will further improve their system dynamics and group model-building skills. We may also rely on a double degree agreement with the Tadeo Lozano University in Colombia, with a strong experience in Energy modeling.
During the 3-years program, students will attend lectures and seminars both at the University of Palermo and at our Partner Universities: Bergen (Norway), Nijmegen (the Netherlands), and Bogotà (Colombia).

	1st Semester	2nd Semester
1st Year	- System Dynamics for Outcome-based Performance Management & Governance - Dynamic Performance Management - Dynamic Performance Governance - Service Ecosystems and Collaborative Platforms	- Fundamentals of Dynamic Social Systems - Model-based Analysis and Policy Design - System Dynamics Modelling Process
Notes	*All enrolled Students will take such courses at the University of Palermo*	*Students from the University of Palermo will take the courses stated above at the University of Bergen.*
2nd Year	- Advanced Dynamic Performance Management & Governance for Collaborative Platforms development	- Group Model Building I - Group Model Building II
Notes	*Applied Projects under the Supervision of Faculty, and seminars*	*Students from the University of Palermo will take the courses stated above at the University of Nijmegen or another partner University*
3rd Year	Thesis writing	
Notes	*For those students enrolled in a double degree program, they will write a thesis under the supervision of a professor from the University of Palermo and a professor from the partner university, based on a 'co-tutelle' agreement.*	

How to apply

The PhD in System Dynamics consists of three dinstict curricula:
1. Model-based Public Planning, Policy Design & Management;
2. Legal System Dynamics;
3. Historic, Economic and Social Systems Dynamics.

Candidates wishing to focus their research on qualitative and quantitative System Dynamics modeling must select in the submission portal as their preferred choice the "Model-based Public Planning, Policy Design & Management" curriculum..

More information

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